

WHAT IS CLAIMED IS:

1. A process for preparing monodisperse strongly basic anion exchangers having polyiodide groups comprising
 - (A) charging a monodisperse strongly basic anion exchanger resin into 5 water in a vessel,
 - (B) preparing in a second vessel a mixture of iodine, iodide salt, and water, and
 - (C) circulating the aqueous phase from step (B) over the resin until all iodine crystals are dissolved.
- 10 2. A process according to Claim 1 wherein the monodisperse strongly basic anion exchange resin used in step (A) is a gel-form or macroporous resin.
3. A process according to Claim 1 wherein a salt form of the monodisperse strongly basic anion exchange resin is used in step (A).
- 15 4. A process according to Claim 1 wherein the iodide salt used in process step (B) is an alkali metal iodide, ammonium iodide, or alkaline earth metal iodide.
5. A process according to Claim 1 wherein 0.7 to 2.0 mol of iodide per mol of the strongly basic anion exchanger in salt form are used.
- 20 6. A process according to Claim 1 wherein the resin is loaded with the polyiodide solution at temperatures between 10 and 90°C.
7. A monodisperse strongly basic anion exchange resin having polyiodide groups obtained by
 - (A) charging a monodisperse strongly basic anion exchanger into a 25 vessel with water,
 - (B) preparing a mixture of iodine, iodide salt, and water in a second vessel, and
 - (C) circulating the aqueous phase from step (B) over the resin until all iodine crystals are dissolved.
- 30 8. A resin according to Claim 7 having an iodine release of 3 to 7 ppm and an iodide release of less than 4 ppm.

9. A method for disinfecting or treating drinking water comprising exposing water in need of disinfection or treatment to a monodisperse strongly basic anion exchange resin having polyiodide groups according to Claim 7.
- 5 10. A method for disinfecting water used in the household sector, in the pharmaceutical industry, in the chemical industry, or in medical care facilities comprising exposing such water to a monodisperse strongly basic anion exchange resin having polyiodide groups according to Claim 7.
11. A method comprising carrying out chemical reactions in the 10 presence of iodine or polyiodide obtained using a monodisperse strongly basic anion exchange resin having polyiodide groups according to Claim 7.